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The State of Wellbeing Science *Concepts, Measures, Interventions, and Policies*

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What is Wellbeing?

Wellbeing is a fundamental human goal—we all have a desire for our life to go well. The experience of life going well involves both feeling good and functioning well. Feeling good all the time would not be conducive to wellbeing, as it would devalue the role of negative or painful emotions, which play an important part in our lives when experienced in the appropriate context, such as sadness following misfortune, and distress or even anger following injustice. Some scholars define wellbeing in terms of positive emotions alone (e.g., Layard, 2005, 2011) or the balance of positive to negative emotions (e.g., Kahneman & Krueger, 2006). However, emotional experiences or “hedonic” wellbeing are only part of wellbeing, since emotions are by their nature transient, whereas wellbeing refers to a more sustainable experience. Sustainable wellbeing includes the experience of functioning well, for instance, having a sense of engagement and competence, being resilient in the face of setbacks, having good relationships with others, and a sense of belonging and contributing to a community. The functioning component of wellbeing is similar to Aristotle’s notion of eudaimonic wellbeing, and a number of scholars have equated psychological wellbeing with

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eudaimonic wellbeing (e.g., Ryan, Huta, & Deci, 2008; Ryff, 1989; Waterman, 1993). However, the more general sense of wellbeing described here combines both hedonic and eudaimonic aspects. This combined position has been taken by a number of authors (Huppert, 2009; Keyes, 2002b; Marks & Shah, 2005; Seligman, 2002, 2011).

Some scholars use a very broad definition of happiness that is roughly synonymous with the combined hedonic/eudaimonic view of wellbeing described above. Sometimes this is termed “authentic happiness” (e.g., Seligman, 2002) or “real happiness” (e.g., Salzberg, 2010). The notion of happiness enshrined in Bhutan’s Gross National Happiness (GNH) is another example of a very broad use of the term. In the words of Jigmi Thinley, the prime minister of Bhutan: “This ‘happiness’ has nothing to do with the common use of this word to describe an ephemeral, passing mood—happy today or unhappy tomorrow due to some temporary external condition like praise or blame, gain or loss. Rather, it refers to . . . deep, abiding happiness” (United Nations, 2012, p. 89).

Wellbeing can be used to describe an objective state as well as a subjective experience. Objective wellbeing refers to wellbeing at the societal level: the objective facts of people’s lives; this contrasts with subjective wellbeing, which concerns how people actually experience their lives. As an objective state, wellbeing relates to the quality of outcomes for which a government or organization traditionally regards itself to be responsible; for example, education, health, employment, housing, security, and the environment. In this context, the term wellbeing is often used synonymously with welfare, the latter term emphasizing what governments do to improve objective wellbeing, as opposed to simply evaluating wellbeing. Used in its subjective sense, wellbeing refers to the way citizens experience their lives, which may bear a strong or only a weak relationship to the objective facts of people’s lives. This chapter, and indeed this volume, is focused primarily on wellbeing in its subjective sense. As with objective wellbeing, we can examine its components and current state, and the variety of ways in which efforts have been made, or are being made, to improve it.

What is the Relationship Between Wellbeing and Illbeing?

Wellbeing versus the Absence of Illbeing

A senior civil servant in the United Kingdom recently made the encouraging comment that wellbeing is the core aim of all government departments. He





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went on to explain that since no department has the intention of making life worse for citizens, wellbeing must therefore be their goal. This comment reflects a classic misunderstanding of the relationship between wellbeing and illbeing.

Wellbeing is more than the absence of illbeing, just as health is more than the absence of disease (World Health Organization, 1946). Yet it is remarkable how resistant large sectors of the academic, practitioner, and policy communities are to recognizing the importance of positive wellbeing or of positive health. Many, if not most of the studies that purport to improve health or wellbeing in fact focus on symptom reduction, and their outcome measures usually do not even include assessment of positive feeling or positive functioning. Surprisingly, this is even true of the numerous trials using the Penn Resiliency Program undertaken in various parts of the world to increase social and emotional wellbeing in schoolchildren (Challen, Noden, West, & Machin, 2011; Gillham et al., 2007). The primary outcome measure has been reduction in symptoms of depression, anxiety, and conduct disorders. In the same way, school-based interventions to prevent bullying rarely go on to examine improvements in subjective wellbeing, interpersonal relationships or pro-social behavior. Likewise, work-based interventions too often assume that wellbeing will result from programs designed to reduce stress, but rarely do they evaluate increases in positive emotions, vitality, perceived competence, and the like. However, as contributions to this volume indicate, the situation is beginning to change, and increases in positive wellbeing outcomes are beginning to be measured in addition to decreases in negative wellbeing outcomes.

Unfortunately, resistance to prioritizing positive outcomes remains high in the field of health, including mental health. In the 1930s, a working group involved in planning a national health system for the United Kingdom wrote:

Health must come first: the mere state of not being ill must be recognised as an unacceptable substitute, too often tolerated or even regarded as normal. We must, moreover, face the fact that while immense study has been lavished on disease, no-one has intensively studied and analysed health, and our ignorance of the subject is now so deep that we can hardly claim scientifically to know what health is.

Political and Economic Planning (1937), p. 395

Sadly, within the medical profession the situation has hardly changed over the intervening 80 years, although some recent attempts are being made to conceptualize and measure positive physical health (e.g., Seeman, 1989;





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Seligman, 2008). One manifestation of this is the refocusing which has taken place within the American Heart Association, which now emphasizes cardiovascular vitality rather than cardiovascular disease. Within the mental health profession, an encouraging sign comes from the collaborative recovery model, where it is recognized that patients want to move beyond the absence of symptoms, towards feeling good and being fully functional (Oades et al., 2005).

Wellbeing as Positive Mental Health

The real developments in positive mental health, however, have come from non-clinicians, including psychologists, social scientists, and public health researchers, Jahoda (1958) is generally regarded as the first person to have promoted the idea of positive mental health, which she defined in terms of six elements of positive functioning: “attitudes of an individual towards his own self,” “self-actualization,” “integration,” “autonomy,” “perception of reality,” and “environmental mastery” (Table 1.1). In the 1980s, Ryff (1989) proposed six dimensions of positive mental health or “psychological wellbeing” that bear some resemblance to Jahoda’s six elements of positive functioning: autonomy, environmental mastery, personal growth, positive relationships, purpose in life, and self-acceptance. Antonovsky (1987) coined the term “salutogenesis” to promote an interest in the development of



Table 1.1. Components of Positive Mental Health or Psychological Wellbeing.

Jahoda (1958)	Ryff (1989)	Antonovsky (1987)	Ryan and Deci (2001)	Seligman (2011)
Autonomy	Autonomy	Comprehensibility	Autonomy	Positive emotion
Environmental mastery	Environmental mastery	Manageability	Competence	Engagement
Self-actualization	Personal growth	Meaningfulness	Relatedness	Relationships
Self-attitude	Self-acceptance			Meaning
Integration	Purpose in life			Accomplishment
Perception of reality	Positive relationships			





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health rather than of disease. Central to his concept of health is a “sense of coherence,” whereby life is seen as comprehensible, manageable, and meaningful. All three of these theorists view mental health and mental illness as lying along a continuum, with mental illhealth at one end and mental health at the other, although each has a different list of what they regard as the key components of mental health.

Other wellbeing theorists do not explicitly refer to a mental illness/health continuum but can nevertheless be regarded as contributing to the body of theories about what constitutes positive mental health. Seligman, who initially regarded wellbeing (“authentic happiness”) as the combination of pleasure, engagement, and meaning (Seligman, 2002), has added two components in his more recent book (Seligman, 2011). These are relationships and accomplishment, which creates the acronym PERMA: positive emotion, engagement, relationships, meaning, accomplishment. For Ryan and Deci (2001), wellbeing arises from the fulfilment of what they describe as the basic psychological needs, and which they identify as autonomy, competence, and relatedness.

Although there is substantial overlap between these major theoretical approaches to psychological wellbeing or positive mental health, each scholar has their own preferred list of components. A recent paper by Huppert and So (2013) endeavored to derive a list of the components of psychological wellbeing in a more objective manner. They began by proposing a single, underlying mental health spectrum, with mental illbeing at one end and mental wellbeing at the opposite end. This meant that they conceived wellbeing not as the absence of illbeing, but as its *opposite* (Figure 1.1). To establish the components that comprise wellbeing, they examined the internationally agreed criteria for the common mental disorders (as defined in the Diagnostic and Statistical Manual of Mental Disorders, DSM-IV, and the International Statistical Classification of Diseases and Related Health Problems, ICD-10) and for each symptom listed the opposite characteristic. This resulted in a list of 10 features which represent positive mental health or “flourishing”: competence, emotional stability, engagement, meaning, optimism, positive emotion, positive relationships, resilience, self-esteem, and vitality. And just as symptoms of mental illness are combined in specific ways to provide an operational definition of each of the common mental disorders, they proposed that positive features could be combined in a specific way to provide an operational definition of flourishing.



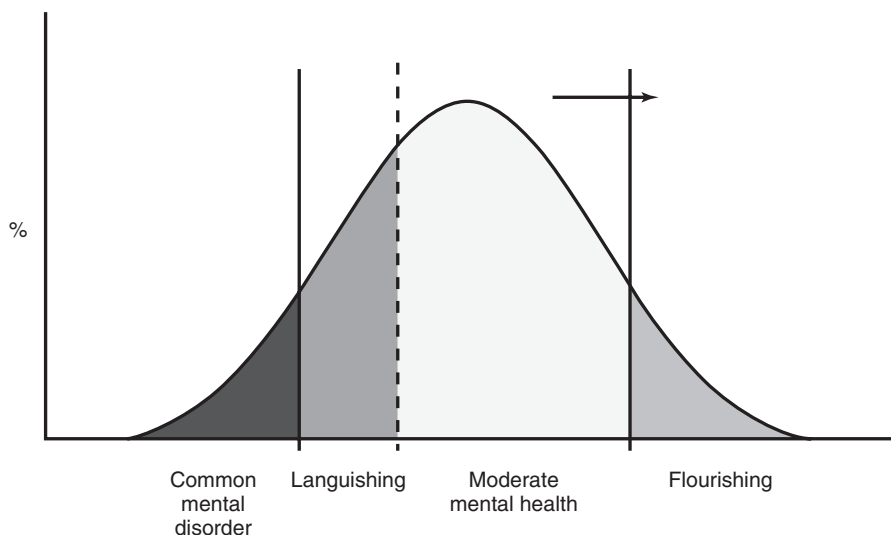


Figure 1.1. The Mental Health Spectrum. Based on Huppert et al. (2009).

Having an operational definition of flourishing makes it possible to examine the prevalence of flourishing within or between groups and the factors associated with flourishing.



One Mental Health Continuum or Two?

There is an alternative school of thought which proposes that mental wellbeing and illbeing are not at opposite ends of a continuum, but rather form two different continua. According to this view, it is possible to have both a serious mental illness, and be flourishing at the same time. The strongest proponent of the two-continua model is Keyes (2002b); one continuum goes from severe mental disorder to no mental disorder, while the other goes from low wellbeing (“languishing”) to high wellbeing (“flourishing”). This is a reasonable position to take in the case of certain chronic mental disorders, such as schizophrenia or personality disorder, in which there are undoubtedly times when the person may be feeling and functioning well, despite their clinical diagnosis. But it is argued by Huppert and So (2013) that this model is less convincing in relation to the common mental disorders, such as major depression and anxiety. Such disorders are common both in the sense that they are very prevalent in the population, and in the sense that virtually any member of the population may be diagnosed



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with one of these disorders at some point in their life. It is difficult to conceive how someone with a current diagnosis of major depressive disorder could be regarded as flourishing at the same time. Certainly in the course of recovery, when the person no longer meets diagnostic criteria, and is feeling and functioning better, they may move towards flourishing. Indeed it is encouraging that the recovery model now recognizes that for patients who have had a mental disorder, it is not sufficient to be relieved of their symptoms; rather, they want to be able to feel good and function well.

The fact that symptoms of mental disorder can coexist with some features of flourishing is not in doubt; it is the interpretation of this coexistence which requires examination. For example, in a representative population sample of over 6,000 U.K. adults, Huppert and Whittington (2003) created scales of both positive and negative wellbeing from the General Health Questionnaire (GHQ-30) (Goldberg, 1972; Goldberg & Williams, 1988) and reported that there was some degree of independence between these measures. While the majority of people (65%) who had high scores on one of the scales (either high negative or high positive) had low scores on the other scale, 35% either had high scores on both positive and negative wellbeing measures, or low scores on both. There are at least two explanations for this finding, and similar ones reported by Keyes (2002a, 2002b), which do not require us to postulate a dual continuum model. The first concerns the timeframe over which the respondent is being asked to rate their experiences. In the case of the GHQ, the timeframe is “Have you recently . . .?” It is possible that a person could have recently experienced periods of despair or high anxiety, as well as periods of pleasure and positive functioning. In Keyes’ (2002b) original paper on this topic, the timeframe for reporting wellbeing was one month, and the timeframe for reporting mental illness was the past year, so it is entirely possible that respondents had periods of mental illness as well as periods of flourishing. This does not constitute compelling evidence that illbeing and wellbeing can coexist at one and the same time.

The second reason why it appears to be possible for illbeing and wellbeing to coexist is related to the nature of diagnostic criteria and operational definitions. The diagnostic criteria for a mental disorder do not require that all the symptoms be present; likewise, the operational definitions of flourishing (Huppert & So, 2013; Keyes, 2002b) do not require that all the features of positive feeling and functioning be present. It would therefore be unsurprising to find an overlap between symptoms of mental disorder and features of flourishing. Thus it appears that while there is no dispute about the evidence of overlap between symptoms/features of positive/negative



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mental health, there is no necessity to postulate a dual continuum model, at least in the case of the common mental disorders.

Measuring Wellbeing

In 2011, the most senior civil servant in the U.K. Government, Gus O'Donnell, said in a speech about wellbeing "If you treasure it, measure it." If we accept wellbeing as a fundamental human goal, and recognize that GDP and other indicators beloved of governments are just the means to that goal, we need to measure wellbeing—and we need to measure it well. This requires the use of subjective indicators to establish how people experience their lives and this, in turn, requires us to measure how people feel, and how well they perceive themselves to be functioning. So how good are our measures of wellbeing and what do they tell us about the causes of wellbeing and how to improve it?

The measurement of wellbeing has a long history, going back to at least the 1960s. Wellbeing measurement developed in the context of utilitarian economics (i.e., the idea that happiness was the greatest good, and that the aim of government should be creating the greatest happiness for the greatest number). This idea has much earlier origins in the philosophical writings of Priestley (1768), Bentham (1789), and Mill (1863/1972). However, it was not until the twentieth century that attempts were made to measure happiness. Since behaviorists were in the ascendance in the early part of the twentieth century, economists opted to measure behavioral proxies for happiness, such as consumption, since it was assumed that people chose to spend money on the things that brought them pleasure. Attempts to measure the feeling of happiness were regarded as being deeply suspect and, in principle, impossible. But as the cognitive revolution took over from behaviorism in the second half of the twentieth century, we witnessed the advent of measures of subjective wellbeing. The earliest, most influential of these is Cantril's (1965) Ladder of Life scale, which is still widely used as a measure of life satisfaction today (e.g., in the Gallup World Poll). The wording of the Cantril scale is as follows:

Please imagine a ladder with steps numbered from zero at the bottom to ten at the top. The top of the ladder represents the best possible life for you and the bottom of the ladder represents the worst possible life for you. On which step of the ladder would you personally say you stand at this time?





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A few years later, Bradburn (1969) published his Affect Balance Scale, which comprises five questions about positive emotions and five about negative emotions. However, it is the life satisfaction approach, either using Cantril's scale or other single-item measures of life satisfaction that have predominated in the literature, presumably because the designers of large-scale surveys would prefer to measure wellbeing with one item rather than ten. There are also a number of single-item measures of happiness which have been used in survey research, including questions such as, "Taking all things together, how happy would you say you are?" (European Social Survey, Jowell & the Central Co-ordinating Team, 2003).

Is Life Satisfaction a Good Measure of Wellbeing?

By far the most widely used conceptualization of wellbeing has been the sense of satisfaction with one's life. This conceptualization is inferred from the fact that the vast bulk of research on wellbeing uses a single question about life satisfaction such as "All things considered, how satisfied are you with your life as a whole these days?" (World Values Survey, www.worldvaluessurvey.org). It would, of course, be very efficient to be able to measure wellbeing with just one question. However, we need to consider whether such a question really captures the essence of wellbeing (i.e., the experience of feeling good and functioning well).

There have been numerous critiques of life satisfaction as a valid indicator of subjective wellbeing. One is that it suffers from contextual effects, the evidence showing that responses (typically on a scale from 0 to 10) can be easily influenced by current mood or adjacent questions (Schwarz & Strack, 1999). Although this is certainly true, it is not a criticism unique to measure of life satisfaction, but applies to any self-report item. Another is that life satisfaction is a trait-like variable reflecting the way in which a person likes to think of themselves. For instance, few people like to think they are the sort of person who is generally dissatisfied, and this may account for the marked skew typically seen on this measure (most people score 7 or 8 out of 10). Another critique is that scores on life satisfaction measures typically show little variation within individuals or nations, which is consistent with their trait-like property. They typically move only a few decimal points in response to major events. But since surveys are usually conducted on very large samples, those tiny movements are often statistically significant, and regarded as meaningful and informative (e.g., Diener, Inglehart, & Tay, 2013). There are, in my view, three more important criticisms of the use of





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a life satisfaction item (or several) to indicate how a person is experiencing their life; these concern the question's comprehensibility, complexity, and congruence with related constructs.

First, when questioned using cognitive interviewing, a high percentage of respondents do not really understand what is meant by the term "satisfied" (e.g., Ralph, Palmer, & Olney, 2012), but nevertheless feel obliged to give a response. In the case of Cantril's (1965) original phrasing of the question about life satisfaction, it is not clear whether it has ever been cognitively tested. It seems very unlikely that different respondents would have a similar understanding of what to regard as the best possible and worst possible life. Some may limit the comparison to a realistic estimate of what could happen to people like them, while others may compare their life to those very unlike them, such as those suffering from real or imagined horrors. Thus, how respondents comprehend life satisfaction questions is likely to vary widely.

Second, a question about satisfaction requires a complex evaluation. Not only is one invited to consider all aspects of one's life (an impossible task in a few seconds), but one has tacitly to balance experience with expectations. Thus, one respondent may give a high score on a life satisfaction scale because their experience is genuinely very good, while another respondent may give a high score although their experience is not very good but their expectations are low. This complexity is particularly troubling if life satisfaction is used to measure the outcome of interventions or policies, since it is not possible to know whether a change in score reflects a change in experience or a change in expectations. A fine policy may result in little or no change in life satisfaction because it both resulted in more positive experiences and also raised expectations.

Third, if life satisfaction was really a good indicator of the experiences that matter to people in their lives, we would expect it to correlate highly with measures of the things that matter. There is abundant evidence that relationships and having a sense of meaning in one's life are profoundly important to people's wellbeing, yet the correlation between a life satisfaction measure and scores on specific questions about the things that really matter are very low (e.g., Huppert & So, 2013; Ryff & Keyes, 1995), typically around 0.2–0.3 in population samples.

For all these reasons, it is clear that if we want a valid and reliable measure of wellbeing, and if we want to measure what really matters to people, we need to go beyond measures of life satisfaction. Indeed, if we were beginning afresh to consider how to measure wellbeing, it is most unlikely





that we would come up with a question about life satisfaction. On the other hand, most researchers and policy makers would argue that it is worth retaining such a question, if only because without it we could not make historical comparisons. Interestingly, even Ed Diener, an ardent advocate of life satisfaction measures who developed one of the best known scales, the Satisfaction With Life Scale (Diener, Emmons, Larsen, & Griffin, 1985), has recently developed two new measures of wellbeing that focus on feeling and functioning: the Scale of Positive and Negative Experience, and the Flourishing Scale (Diener et al., 2010).

Beyond Measures of Happiness and Life Satisfaction: Wellbeing as a Multidimensional Construct

There is new widespread agreement that wellbeing is more than just happiness and cannot be captured by measures of affective state alone, even if the balance between positive and negative affect is measured, as some authors advocate (e.g., Kahneman & Krueger, 2006). Nor, as indicated above, can the notion of wellbeing be adequately captured by a measure of life satisfaction, even if this is measured using several items (e.g., Diener et al., 1985) or across multiple domains of life (e.g., Cummins Eckersley, Pallant, Van Vugt, & Misajon, 2003). The research community now generally concurs that to do justice to the concept of wellbeing, measures need to include an evaluation of how well people perceive themselves to be functioning: often referred to as eudaimonic wellbeing or psychological wellbeing.

So what exactly should we be measuring? What are the key components of perceived positive functioning? Here we encounter a problem. Depending on their theoretical framework, each set of researchers comes up with a different list of the key components. Some of the most influential lists were summarized in Table 1.1. Most of these lists have measurement scales associated with them, or in the case of the newest list by Seligman, a measurement scale is currently being developed (Butler & Kern, 2013). There are also measures that have been developed more pragmatically by reviewing existing scales and items assessing wellbeing and related constructs, and identifying what the authors regard as the key components. Examples of this approach include the widely used Warwick–Edinburgh Mental Wellbeing Scale (Stewart-Brown et al., 2009; Tennant et al., 2007) and the Flourishing Scale of Diener et al. (2010). There are many more initiatives which have





reviewed existing measures and come up with their own recommendations, such as NHS Scotland (Parkinson, 2007), NIH Toolbox (Gershon et al., 2010; Salsman et al., 2013), and the European Social Survey (Huppert, Abbott, Ploubidis, Richards, & Kuh, 2009). Most of the measures have been developed for adults, but there is a large parallel endeavor that has reviewed and developed numerous wellbeing scales for children (e.g., Hicks, Newton, Haynes, & Evans, 2011; New Economics Foundation, 2009; Parkinson, 2012).

Managing the Multiplicity of Wellbeing Theories and Measures

The plethora of different approaches used to identify the key components of wellbeing, and the huge number and variety of available scales can cause confusion for investigators who wish to establish whether their intervention has increased wellbeing. Which approach and scale should they use? It is also confusing and unhelpful for policy makers, who need the experts to agree on what they should be measuring in population surveys to establish that their policies have had wellbeing benefits.

I believe there are three types of solutions to this impasse. The first is to find an objective way to create a list of the key components of wellbeing; the second is to engage experts within the research community to arrive at a consensus; the third is to apply psychometric techniques to establish the minimum set of components that cover the key wellbeing constructs.

The first approach is exemplified by the work of Huppert and So (2013), described in an earlier section. They used an objective approach to creating a list of the components of wellbeing by making the assumption that mental wellbeing was the opposite of mental illbeing (the common disorders of depression and anxiety), and defining the features of wellbeing as the opposite of the internationally agreed symptoms of depression and anxiety (Huppert & So, 2013). This resulted in the following 10 features of wellbeing or “flourishing”: competence, emotional stability, engagement, meaning, optimism, positive emotion, positive relationships, resilience, self-esteem, and vitality.

The second approach is an expert consensus. A recent endeavor to obtain a consensus on the measurement of eudaimonic wellbeing has been spearheaded by Abdallah at the New Economics Foundation. Abdallah has contacted a large and growing list of experts to contribute to a debate and





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discussion about what should be regarded as the scope and components of eudaimonic wellbeing.

Ultimately, however, a good measure of wellbeing will need to be based on sound psychometric principles. Experts may (or may not) in the end agree on what to include as the key components of wellbeing, but knowing how these components relate to each other, and whether one needs a subscale to measure each of them, remains an empirical question. The techniques of factor analysis need to be used to establish how the different components cluster together, and how much additional information is provided by the components within a factor. For example, it may be that constructs such as engagement, competence, self-efficacy, self-esteem, are so closely related that little additional information is provided by measuring all of them, rather than measuring just one of them. Ideally therefore, what is required is an exercise in which the experts agree on the key components of wellbeing as well as key items that measure these components, and then this set of items is administered to very large and representative population samples to establish the factorial structure, and to identify which items provide the maximum information for each factor. The consistency of the factorial structure would need to be checked across demographic groups and across cultures or nations. But the final result could be a very efficient measuring instrument, containing a small number of items that maximize the information captured. Additional analysis using item response theory (IRT) would ensure that each item measured and any overall scales or subscales provide reliable measures across the full range of scores from very low wellbeing to very high wellbeing.



Composite Measure or a Dashboard?

A composite measure can be useful as a summary, provided there are good theoretical and empirical reasons to put a number of measures together. In economics, the most widely used composite measure is gross domestic product (GDP), which combines the amount spent by individuals, businesses and other organizations, and by government. Of course, each of these three areas itself combines many distinct components. It took many years for international organizations to agree on which measures to combine to create GDP as a composite measure of economic growth. Although the present measure of GDP has many critics, and will undoubtedly be improved in time, such a composite provides a useful summary of economic performance over time or between nations. However, a composite measure of this type is





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of limited value in guiding interventions. Knowing a nation's GDP gives no indication of how to go about increasing it. For the purposes of intervention, it is essential to consider the components of the composite measure, and to decide which of the components need to be changed, and then work out the best ways to change them. Some governments may decide that the best way to increase GDP is to target just one area of spending (e.g., to encourage individuals to spend more), or for the government to increase the amount it spends on welfare, infrastructure projects, and the like. Another government may focus on the business sector, or increase expenditure in all three domains. Whatever decision they make, it is essential to keep track of change in the various components of GDP.

Likewise, it will be valuable in due course to create a composite measure of wellbeing. Useful as such a wellbeing composite will be, it will never be enough if we are interested in interventions or policies to improve wellbeing. We will always need to know which of the key components needs improving, and whether the intervention or policy has been successful in improving that component. We therefore also need to think in terms of a dashboard of wellbeing components. So how many components should one have on a dashboard? There is no simple answer to this question. Clearly, fewer is better, so long as the elements in the dashboard provide all the essential information. At this early stage in the science of wellbeing and wellbeing measurement, we should err on the side of having too many indicators rather than too few. Further developments in theory, empirical research, and psychometric analysis can then establish the minimum number of indicators that provide the essential information.

To illustrate the importance of examining the components of wellbeing, Huppert and So (2013) provided profiles of scores across the 10 features of flourishing in 22 European nations. A selection of these profiles, using rank ordering, can be seen in Figure 1.2.

As can be seen, countries in Western Europe show very different profiles across the 10 features of flourishing. France has often been a puzzle for wellbeing researchers since it usually has low scores on global measures of wellbeing, such as life satisfaction (6.4 in the ESS data) despite its relative wealth, short working hours, and commitment to quality food, wine, and leisure activities. Examining the French profile is very informative; of the 22 countries studied, France had the highest ranking on the measure of engagement, but the lowest on self-esteem, and was also among the lowest on optimism and positive relationships. In contrast, Spain had the highest ranking on self-esteem, but the lowest rankings on the measures



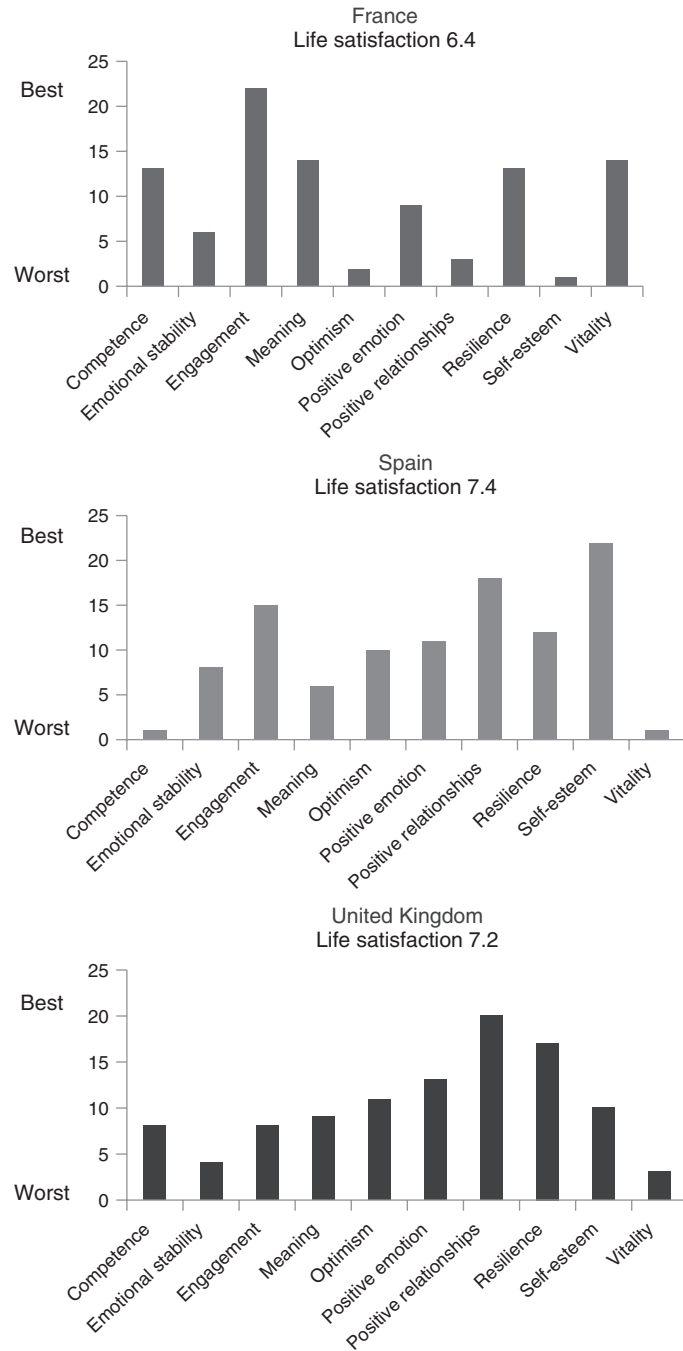


Figure 1.2. Profiles of Flourishing in Three European Countries.



of competence and vitality. Despite the fact that Spain and the United Kingdom have almost identical scores on life satisfaction in this study (7.4 and 7.2, respectively), Figure 1.2 shows that their profiles are very different. Although cultural differences may account for some of the variation between countries, Huppert and So (2013) demonstrated structural invariants of the measurement scale and measurement equivalence across European regions. Furthermore, So and Huppert (2013) have demonstrated scale invariants and measurement equivalents across almost all the individual European countries studied, including France, Spain, and the United Kingdom, the exceptions being Cyprus, Estonia, and the Ukraine.

What is clear from the sample countries presented in Figure 1.2, is that much valuable data would have been lost if we did not take a multidimensional approach to the measurement of subjective wellbeing. Furthermore, the findings have clear implications for policy; if the French government wishes to improve wellbeing, they need to focus on self-esteem, optimism, and relationships, whereas if the Spanish government wishes to improve wellbeing, they should focus on sense of competence and vitality, while the United Kingdom needs to focus on vitality and emotional stability.



What Do We Know about the Causes of Wellbeing?



The development of interventions to enhance wellbeing presupposes that we understand the causes of wellbeing. If we know what causes wellbeing in individuals, families, organizations, or nations, we should be able to use this knowledge to develop effective interventions. So how much do we know about the determinants of wellbeing?

In truth, we know remarkably little about what causes wellbeing. There are four main reasons for this: (a) the vast majority of studies report cross-sectional associations, and neither causality, nor its direction, can be deduced with certainty; (b) longitudinal studies, particularly when analyzed with structural equation modeling, provide a better indication of causality, but there is always the possibility of a third factor (e.g., genetic predisposition, early environment) which causes both wellbeing and its apparent antecedents; (c) experimental studies are valuable for showing the direction of causality, but usually investigate very short-term outcomes; (d) very few of the studies designed to establish causality contain adequate measures of wellbeing, either because wellbeing has been equated with the absence of illbeing, or because the studies do not incorporate adequate





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measures of wellbeing; rather, they tend to be restricted to measuring life satisfaction, a wellbeing measure which is seriously flawed (see section on Life Satisfaction, above).

Furthermore, even when we find a strong association between wellbeing and some of its putative causes, and even if this relationship can be shown to be causal, it may well be a bi-directional relationship. Many of the socio-economic, health, personal, and lifestyle factors that have been linked to wellbeing are as likely to be the consequence of wellbeing as its cause. For instance, having good relationships or engaging work may enhance wellbeing, but a high level of wellbeing may also increase the chance of developing good relationships and finding engaging work. Thus, a person can get into an upward spiral in which socioeconomic circumstances and individual behaviors can enhance wellbeing, which in turn increases the likelihood of having desirable socioeconomic circumstances and positive behaviors.

Drivers of Wellbeing

With the above caveats in mind, we can summarize the factors that have been strongly associated with and are perhaps causally related to wellbeing; such factors are often known as the drivers of wellbeing. A comprehensive and authoritative review of the drivers has recently been published by Stoll, Michelson, and Seaford (2012). Below is a summary of their key findings, along with some additional material. Note that these findings are based on associations which have received the most attention from researchers, who have mostly come from economics and the social sciences rather than psychology; they are not necessarily the associations which have the strongest relationship to wellbeing. More detail on the psychological variables associated with wellbeing can be found in the section on Attitudes, Behaviors, and Wellbeing.

Material living conditions.

Individual or household income is positively related to life satisfaction within and between countries and at any point in time (e.g., Blanchflower & Oswald, 2004; Easterlin, 2001; Frey & Stutzer, 2000; Helliwell, 2003; Kahneman & Deaton, 2010). However, this relationship shows diminishing marginal returns, that is, the effect is smaller at higher levels of income (e.g., Diener, Diener, & Diener, 1995; Veenhoven, 1991). Evaluative measures such as life satisfaction are more strongly related to income than



are other measures of wellbeing, such as happiness or emotional wellbeing (e.g., Kahneman & Deaton, 2010). Relative income explains more of the wellbeing variants than absolute income, at least in high-income countries (e.g., Layard, 2005). Material disadvantage, such as poor housing quality, unaffordability of a one-week holiday, and difficulty in making ends meet, is strongly associated with low subjective wellbeing (e.g., Evans, Wells, & Moch, 2003; Watson, Pichler, & Wallace, 2010).

Insecurity also has a powerful effect on wellbeing, particularly job insecurity (e.g., Blanchflower & Oswald, 2011; Burchell, 1994) and unmanageable debt (Brown, Taylor, & Wheatley Price, 2005; Cummins et al., 2004). Although these relationships can be bi-directional, there is longitudinal evidence of both debt and job insecurity being causally related to low subjective wellbeing (e.g., Blanchflower & Oswald, 2011; Jenkins et al., 2008a). Another aspect of insecurity associated with wellbeing is fear of crime (e.g., not feeling safe walking alone locally after dark), and this effect is greater than the effect of actual crime statistics on wellbeing (Adams & Serpe, 2000; Lelkes, 2006).

Employment and work-related factors.

Being employed is related to subjective wellbeing, and unemployment is strongly negatively related to various measures of subjective wellbeing (Blanchflower & Oswald, 2011; Clark & Oswald, 1994; Frey & Stutzer, 2000; Helliwell, 2003). Although low wellbeing can lead to unemployment, there is clear evidence from longitudinal studies that the experience of unemployment leads to low subjective wellbeing (e.g., Dolan, Peasgood, & White, 2008; Oswald & Powdthavee, 2005), and there is evidence that the loss of wellbeing far exceeds that expected from the reduction in income from unemployment (e.g., Clark & Oswald, 1994; Dolan et al., 2008). There is also evidence of a relationship between subjective wellbeing and quality of work (e.g., workplace trust, having a job that requires skills, offers variety, and can be completed satisfactorily) (Helliwell & Huang, 2010). Other work-related variables, such as work–life balance and commuting time, are also associated with subjective wellbeing. There is an inverse U-shaped relationship between hours worked and subjective wellbeing (Helliwell & Huang, 2010; Luechinger, Meier, & Stutzer, 2010; Weinzierl, 2005), and longer commuting time is associated with lower subjective wellbeing, including life satisfaction and negative emotions (e.g., Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004a; Putnam, 2000).

Health.

Numerous studies show a relationship between low subjective wellbeing and poor self-reported health, even after controlling for the reverse impact that wellbeing has on health (Dolan et al., 2008; Helliwell, 2003; Winkelmann & Winkelmann, 1998). Although people may adapt to some degree to chronic illness, complete adaptation does not seem to occur (e.g., Oswald & Powdthavee, 2005). Poor objective health and disability are also associated with lower subjective wellbeing, although this relationship is weaker than that of self-reported health and subjective wellbeing (e.g., Dolan et al., 2008). In relation to psychological illhealth, affective disorders (e.g., depression, anxiety) are associated, unsurprisingly, with poor subjective wellbeing (e.g., Diener & Seligman, 2004), but even conditions such as schizophrenia are linked to significantly lower levels of wellbeing (e.g., Suslow, Roestela, Ohrmanna, & Arolta, 2003). Overall, it is disappointing that research on the relationship between health and wellbeing has focused almost exclusively on poor health and low subjective wellbeing. The importance of conceptualizing and investigating positive physical health has been made previously (Seeman, 1989; Seligman, 2008). It is to be hoped that future research will focus on the relationship between positive physical health and subjective wellbeing.

With respect to health-related behaviors, physical activity has a beneficial effect on subjective wellbeing (e.g., Biddle & Ekkekakis, 2005), and is also associated with reduced mental health problems (e.g., O'Connor, Smith, & Morgan, 2000), though there is limited evidence on the direction of causality. Sufficient sleep (typically 6–8 hours per night) is associated with better psychological functioning and positive emotions, and with fewer symptoms of anxiety and depression (Hamilton, Catley, & Karlson, 2007; Hamilton, Nelson, Stevens, & Kitzman, 2007; Kahneman et al., 2004a; Steptoe, O'Donnell, Marmot, & Wardle, 2008). Conversely, poor sleep is associated with low subjective wellbeing, although the direction of causality in these relationships remains to be established. Surprisingly, little research has yet been undertaken on the relationship between diet and wellbeing, although there is some evidence that eating fresh fruit and vegetables, and limiting fat intake, is related to overall life satisfaction (e.g., Blanchflower & Oswald, 2011; Grant, Wardle, & Steptoe, 2009), although yet again the direction of causality has not been established.

Education.

There is usually a relationship between education and subjective wellbeing (Blanchflower & Oswald, 2004; Frey & Stutzer, 2000), but this is probably mediated by other factors, including health, income, and social mobility (e.g., Diener, Suh, Lucas, & Smith, 1999; Dolan, Peasgood, & White, 2006). Some studies have shown a non-linear relationship between education level and life satisfaction, whereby an average level of education rather than the highest level is related to higher life satisfaction (e.g., Helliwell, 2003). Quality of education is important in making learning enjoyable, fostering personal development, and promoting social wellbeing, all of which are associated with later subjective wellbeing (Gutman & Feinstein, 2008a, 2008b; Statham & Chase, 2010).

Social relationships.

Some studies have found that an individual's relationship with their partner and family is the single most important determinant of wellbeing (e.g., Bacon, Brophy, Mguni, Mulgan, & Shandro, 2010; Kapteyn, Smith, & van Soest, 2010). Numerous studies, both cross-sectional and longitudinal, show that being married is strongly associated with overall life satisfaction, happiness, and positive psychological functioning (e.g., Blanchflower & Oswald, 2011; Diener et al., 1999; Dolan et al., 2006; Marks & Lambert, 1998). However, the effect of marriage is probably mediated through having a secure and supportive relationship: the wellbeing effect of living with a partner is high when the relationship is perceived to be stable (Brown, 2000). In general, social trust (trust in other people) is strongly associated with high life satisfaction and happiness (e.g., Helliwell, 2003), and the number and strength of social connections are among the largest and most robust predictors of subjective wellbeing, including life satisfaction, overall happiness, and decrease in depressive symptoms (e.g., Dolan et al., 2008; Helliwell & Putnam, 2004; Pichler, 2006; Powdthavee, 2008).

There is also a positive relationship between volunteering or altruistic behavior and wellbeing, which appears to be universal (e.g., Helliwell, 2003; Plagnol & Huppert, 2010) and related to the frequency of volunteering (Meier & Stutzer, 2008). Participation in leisure activities in general contributes positively to subjective wellbeing (e.g., Brajsa-Zganec, Merkas, & Sverko, 2011), although this applies more to active participation. In contrast, television viewing, which is largely passive, has a negative effect on

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life satisfaction (e.g., Yang & Oliver, 2010), and this effect appears to be mediated by perceived social comparison and materialist values.

Regular engagement in religious activities is positively related to life satisfaction (e.g., Clark & Leikes, 2005), happiness (e.g., Cohen, 2002), and positive emotion (e.g., Kahneman, Krueger, Schkade, Schwarz, & Stone, 2004b), and negatively associated with depressive symptoms (e.g., Lee, DeMaris, Bavin, & Sullivan, 2001). The wellbeing benefits of religion appear to come from its social aspects—regular attendance at religious services and building social networks—rather than from overtly religious factors like theology and private religious practices (Lim & Putnam, 2010).

Governance and basic rights.

The reported quality of public services, and trust in key public institutions such as government, the police, and the legal system, is associated with higher life satisfaction (Helliwell & Putnam, 2004; Watson, Pichler, & Wallace, 2010). Perceived discrimination is associated with lower life satisfaction, lower self-esteem, and depressive symptoms (e.g., Seaton, Caldwell, Sellers, & Jackson, 2008). Perceived discrimination is also the main factor underlying the lower subjective wellbeing of many immigrant communities (e.g., Mirna, 2010).

Natural and living environment.

The most comprehensive and up-to-date evidence on the relationship between wellbeing and the natural and physical environment can be found in Volume II of this Wiley series on wellbeing, entitled *Wellbeing and the Environment*. Prior to this, an important review of the health and wellbeing effects of viewing landscapes was published by Velarde, Fry, and Tveit (2007). The authors conclude that although, broadly speaking, natural environments have more positive effects than urban environments on health and wellbeing, the categories used in the existing research were very coarse, and provide little information about the specific elements that can make a difference in terms of health or wellbeing benefits.

It should be noted that most of the research on this topic uses cross-sectional surveys or naturalistic observation (e.g., an experience sampling method). Although there are a number of experimental studies where participants are allocated to different groups (e.g., Hartig, Evans, Jamner, Davis, & Gärling, 2003), these studies rarely compare like with like; for example, hospital patients with a view of trees are compared to patients with no view,

and there do not appear to be any studies which compare a beautiful urban setting with an ugly natural environment.

With these methodological limitations in mind, the following broad conclusions receive some support. Perceived access to green spaces is positively associated with subjective wellbeing (e.g., Gidlof-Gunnarsson & Ohrstrom, 2007; Guite, Clark, & Ackrill, 2006). Walking or jogging in a natural landscape such as a park has a stronger effect on measures of psychological health than walking or jogging in the street (Bodin & Hartig, 2003; Hartig et al., 2003). Using an experience sampling method, MacKerron and Mourato (2013) found that time spent in all types of green or natural environments is reported as between 1.8 and 2.7 points happier than time spent in urban environments. However, there is evidence that features of the built environment of neighborhoods, such as “walkability” and street layout, are positively related to wellbeing (e.g., Halpern, 2008; Rogers, Halstead, Gardner, & Carlson, 2010), and it is likely that some of this benefit is related to improved social interactions. A positive perception of the surrounding physical environment is associated with positive emotions, reduced stress, and increased social wellbeing (e.g., Abraham, Sommerhalder, & Abel, 2010; Hartig et al., 2003; Korpela, Hartig, Kaiser, & Fuhrer, 2001; Korpela, Klementtila, & Hietanen, 2002; Kuo, Bacaicoa, & Sullivan, 1998; Kweon, Sullivan, & Wiley, 1998; Ulrich et al., 1991). A substantial amount of research has focused on perceived environmental problems, such as air pollution and noise, which are associated with lower subjective wellbeing, even when adjustment has been made for potential confounders such as income (Ferrer-I-Carbonell & Gowdy, 2005; Luechinger, 2009; MacKerron & Mourato, 2009; van Praag & Baarsma, 2005; Welsch, 2002, 2003).

Personal characteristics.

Wellbeing is related to gender, age, personality, and personal values. In a recent report using data from the Gallop World Poll collected between 2005 and 2010, Graham and Chattopadhyay (2012) found that women have higher average levels of reported wellbeing than men worldwide. In contrast, an important paper on gender and time trends in wellbeing by Stevenson and Wolfers (2009) reported that women in the United States had higher levels of life satisfaction than men from the 1970s until roughly the mid-1990s, after which men had higher life satisfaction scores than women. However, their data only go up to the year 2000. They also report gender and time trends in 12 European countries where the findings are similar but where the gender gap is considerably smaller. Such inconsistent

findings on the relationship between gender and wellbeing contrast with the clear evidence that women demonstrate substantially higher levels of illbeing, such as symptoms of anxiety and depression (Jenkins et al., 2008b). International comparisons show that the gender gap in wellbeing is most marked in economically developed countries, among people with a higher level of education, and in urban compared with rural areas (Graham & Chattopadhyay, 2012).

When wellbeing is assessed using a life satisfaction measure, the relationship between age and wellbeing is U-shaped, with the highest levels in young adulthood and early old age, followed by a decrease in the over 70s (e.g., Baetschmann, 2012; Blanchflower & Oswald, 2008; de Ree & Alessie, 2011). This observation holds for both men and women. The wellbeing dip commonly seen between the ages of about 35 and 55 coincides with the period of maximum career development and financial needs, as well as responsibility for family care: often both for one's children and one's parents. The U-shape may be mediated in part by the problem of work–life balance, which many people experience. However, a more complex picture emerges when wellbeing is assessed using multidimensional measures of wellbeing. For example, sense of coherence improves with advancing age (Stephens, Dulberg, & Joubert, 1999), as do the Ryff dimensions of autonomy and environmental mastery (Ryff & Singer, 1998).

Personality traits are also strongly related to subjective wellbeing (DeNeve & Cooper, 1998). The strongest relationships are found with the personality variables extraversion and neuroticism; extraversion is strongly related to positive emotion (e.g., Diener, Oishi, & Lucas, 2003) and neuroticism to negative emotion (e.g., Schimmack, Schupp, & Wagner, 2008), although Vittersø and Nilsen (2002) found that neuroticism explained eight times as much of the subjective wellbeing variants as extraversion. Longitudinal studies confirm that personality characteristics of individuals in their early teens predict psychological wellbeing in mid- and later life (e.g., Abbott et al., 2008). A strong association between personality and wellbeing may explain why regression models based on data from social surveys often explain only small amounts of variants in wellbeing, since detailed personality measures are rarely included in large-scale social surveys. Since personality tends to be established relatively early in life, what this data underlines is the importance of early experience (and to some degree the role of genetic factors) in the development and maintenance of psychological wellbeing.

Another aspect of personal characteristics which relates to subjective wellbeing is the values that one holds. Individuals who hold more materialistic

values are less happy and less satisfied with their life than those whose values are less materialistic (e.g., Kasser, 2002; Ryan & Dziurawiec, 2001). This effect may be partly mediated through whether one pursues intrinsic or extrinsic goals. Intrinsic goals are defined as being inherently rewarding, and they do not depend on external validation, whereas extrinsic goals are typically pursued as a means to some external reward such as wealth, status, or image. Individuals who are more intrinsically motivated show higher wellbeing relative to those who are more extrinsically motivated (Kasser & Ryan, 1993; Sheldon & Kasser, 2005).

Population-level variables.

The previous sections have all concerned drivers which are measured at the level of the individual. In addition, there is evidence that some population-level variables have effects on wellbeing independent of individual-level variables. The key population-level variables include income inequality, unemployment rate, life expectancy, public spending on welfare, and the presence of democratic institutions. Most, but not all, studies indicate that a higher level of income inequality in a country reduces the average subjective wellbeing of its citizens (e.g., Diener et al., 1995; Helliwell & Huang, 2008; Winkelmann & Winkelmann, 2010). Oishi, Kesebir, and Diener (2011) confirmed this finding in longitudinal data, showing that on average Americans were happier in the years with less income inequality, and found that this relationship could be explained by perceived fairness and general trust. While there is some evidence that income inequality has its greatest effect on lower income groups (Alesina, Di Tella, & MacCulloch, 2004; Oishi et al., 2011). Winkelmann and Winkelmann (2010) have found that the impact of inequality also holds for people on middle incomes. There is some evidence that in Europe those politically on the left are more affected by income inequality (Alesina et al., 2004), and it has been suggested that the relationship between income inequality and subjective wellbeing depends partly on real or perceived social mobility (e.g., Alesina et al., 2004; Senik, 2005). With respect to the unemployment rate, both national and regional data show that higher employment rates reduce subjective wellbeing even for those who are employed (e.g., Helliwell & Huang, 2011) and this has been confirmed in longitudinal data (Luechinger, Meier, & Stutzer, 2010). This effect could be in part mediated by the individual-level variable of job insecurity, as described in an earlier section.

In their analysis of the relationship between population health and subjective wellbeing, Abdallah, Thompson, and Marks (2008) found average life



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expectancy to be the strongest predictor of life satisfaction at the national level, for example ahead of GDP, although there was no similar relationship observed for healthy life expectancy.

In general, higher public spending on social welfare is associated with higher wellbeing at the national level (e.g., Di Tella, MacCulloch, & Oswald, 2003; Kotakorpi & Laamanen, 2010; Pacek & Radcliff, 2008). Flavin, Pacek, and Radcliff (2011) found that in advanced industrial democracies life satisfaction was directly related to the extent of state intervention to protect citizens against pure market forces, controlling for economic social cultural and individual-level factors. They also found that this relationship held across different income levels and political ideologies. However Veenhoven (2000) found no relationship between welfare expenditure and subjective quality of life.

International data show a positive relationship between democratic institutions and life satisfaction (e.g., Helliwell & Huang, 2008), including the extent to which individuals participate in referenda (Frey & Stutzer, 2000). In their analysis of wellbeing in 79 countries, Abdallah et al. (2008) found that accountability and having a voice, as measured by the World Bank's Governance Matters indicators, was a better predictor of life satisfaction than was GDP.



Is there a Genetic Predisposition for Wellbeing?

There are two general statements which can be made concerning the link between genes and subjective wellbeing. First, for any complex outcomes such as mental health and wellbeing, there will be the involvement of multiple genes, each with a small effect. Second, the effects of these genes, even if they are all added together, do not determine wellbeing outcomes: they simply predispose individuals to certain outcomes depending on their environments and experiences, particularly the early environment and the quality of the nurturing which the infant has experienced (e.g., Meaney, 2001).

Studies of twins who have completed a wellbeing questionnaire have claimed to show a large hereditary component underlying responses to the questionnaire (Lykken, 2000). The correlation between the scores of identical twins was around .5, whereas the correlation between the scores of same-sex non-identical twins was around .25, leading the author to conclude that approximately 50% of the variation in subjective wellbeing is heritable. However, this figure is almost certainly an overestimate, since the author did not adequately take into account the differences between the parenting





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received by identical and non-identical twins (Maccoby & Martin, 1983). Parenting is an interactive process, and parents respond differently depending upon the needs, interests and characteristics of their individual children. Thus, parents treat identical twins more or less identically, whereas they treat non-identical twins differently, and these differences may have a bearing on the child's experience of being nurtured. It is hardly surprising therefore, that identical twins show a high correlation on wellbeing measures, since they have identical genes and have received more or less identical parenting. Likewise, it is hardly surprising that non-identical twins show a very low correlation, since they share only half their genes and have had different experiences of parenting. From the classic study of Lykken (2000), what we can safely conclude is not that 50% of the variation in wellbeing is heritable, but that around 50% of the variation in wellbeing reflects a combination of genes and early environment.

With respect to specific genes and their relationship to mental health and wellbeing, most of the research has focused on the bottom end of the wellbeing spectrum, and little is yet known about specific genes linked to positive wellbeing or flourishing. Several genes have been consistently linked to common mental disorders. These include the monoamine oxidase inhibitor gene (MAOA) the serotonin transporter gene (5-HTT), and the dopamine receptor gene (DRD4). What has become clear is that a specific variant of each of these genes predisposes an individual to having a disorder, but only if they have experienced a number of adverse life events (e.g., Caspi et al., 2003; Kendler, Kuhn, Vittum, Prescott, & Riley, 2005) or an adverse early environment (e.g., Bakermans-Kranenburg & van Ijzendoorn, 2006; Caspi et al., 2002; Taylor et al., 2006), thereby underlining the importance of gene–environment interactions.

In relation to positive aspects of wellbeing, a gene that is receiving a great deal of attention relates to the neuropeptide oxytocin. Oxytocin has long been known for its important role in childbirth and lactation, although it is produced by both males and females. Experimental studies have also shown an effect on mother–infant bonding (Kendrick, 2004), pair-bonding (Wang & Aragona, 2004), interpersonal trust (Kosfeld, Heinrichs, Zak, Fischbacher, & Fehr, 2005), generosity (Zak, Stanton, & Ahmadi, 2007), and empathy (Barraza & Zak, 2009). One particular variant of the oxytocin receptor gene (OXTR) has been implicated in social behavior. Individuals homozygous for the G allele (GG genotype) compared with carriers of the A allele (AA, AG genotypes) self-report higher levels of empathy (Rodriguez, Saslow, Garcia, John, & Keltner, 2009), positive emotions



(Lucht et al., 2009), sociality (Tost et al., 2010), and parental sensitivity (Bakermans-Kranenburg, & van Ijzendoorn, 2008). Cultural differences in the expression of this gene have also been reported (Kim et al., 2010, 2011; Kogan et al., 2011).

Perhaps the most exciting development in the field of gene–environment interactions has come from the recognition that the very same genotype which predisposes an individual to having a mental health problem if they experience an adverse early environment, also predisposes an individual to flourishing if they have a positive early environment (Belsky and Pluess, 2009; Pluess, Belsky, Way, & Taylor, 2010). For example, it has been known for some time that individuals who have the short allele of the serotonin transporter (5-HTT) gene are more susceptible to adversity and more likely to become depressed than individuals who have the long allele of the gene. It was accordingly hypothesized that the long allele conveyed resilience to adversity (i.e., mental wellbeing in spite of adverse experiences). New data have turned this theory on its head. The short allele is associated both with succumbing to the negative effects of adversity, and with reaping the benefits of supportive and enriching experiences. In contrast, individuals with the long allele of the 5-HTT gene may appear resilient, since they do not readily succumb to mental disorder despite adversity, but neither do they appear to reap the benefits of positive experiences (Belsky & Pluess, 2009; Pluess et al., 2010).

Attitudes, Behaviors, and Wellbeing

People high in subjective wellbeing tend to have attributional styles that are more self-enhancing and more empowering than those low in subjective wellbeing (e.g., Ryan & Deci, 2001). Although the causal direction is unclear, it is likely that positive attributional styles, including optimism and self-esteem, may contribute to overall subjective wellbeing. A large body of research, both experimental and observational, demonstrates that aspects of motivation or goal pursuit can enhance subjective wellbeing. For example, subjective wellbeing is increased when goals are intrinsically motivated (e.g., Kasser & Ryan, 1993), when there is a sense of progress towards a valued goal (e.g., Sheldon & Kasser, 1998), and when goal pursuit is congruent with personal values (e.g., Sheldon & Elliot, 1999). The research of Little and colleagues has demonstrated that undertaking personally meaningful projects can have an important effect on subjective wellbeing (McGreggor & Little, 1998). Indeed, Little has suggested that subjective wellbeing is



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not increased by the pursuit of happiness, but rather by the happiness of pursuit (Little, 2014).

Active participation in social activities, involvement in one's community, volunteering, and providing help to others are all associated with high levels of happiness and life satisfaction (e.g., Argyle, 1987; Helliwell & Putnam, 2004; Putnam, 2000). Indeed, it has been shown that having a sense of belonging to one's community has a larger effect on life satisfaction than a trebling of household income (Helliwell & Huang, 2011).

Our consumer culture would have us believe that spending money on products that enhance our status or attractiveness is a key to our happiness. However, a seminal study by Dunn (2008) showed that spending money on others led to greater happiness than spending the same sum on one's self. This study used an experimental design in which students were given a small sum of money and were randomly assigned either to spending it on themselves or spending it on someone else. Although both groups showed an increase in their scores on a happiness questionnaire, the increase was larger in the group who spend money on someone else. A major observational study which analyzed survey data from 136 countries showed that prosocial spending is consistently associated with greater happiness (Aknin et al., 2010).

In a masterly summary of the huge mass of evidence on the determinants of wellbeing collected as part of the Foresight Report on Mental Capital and Wellbeing (2008), the New Economics Foundation distilled the "Five Ways to Wellbeing," namely: connect, be active, take notice, keep learning, and give (New Economics Foundation, 2008). These are the actions or behaviors for which there is the strongest evidence of benefit for subjective wellbeing. The Five Ways to Wellbeing can be implemented both in the form of actions that individuals can take, or behaviors that can be encouraged by organizations or communities to enhance wellbeing, and numerous applications of the Five Ways have shown evidence of benefit (New Economics Foundation, 2008).

Interventions to Enhance Wellbeing

Although there is much we have yet to learn about the causal mechanisms that lead to high levels of sustainable subjective wellbeing, there is a dazzling array of interventions on offer to increase wellbeing: everything from the growing volume of self-help books and online advice, to community and





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environmental projects, such as pedestrianization, cycling campaigns, and community gardens. To bring some order to the bewildering variety of approaches, it is helpful to consider the main targets of the intervention and the main types of intervention.

Target of the Intervention

Interventions may be targeted at individuals, groups, or organizations (e.g., family, school, workplace), at communities or neighborhoods, or whole regions or nations. They may be focused on a particular life stage, such as primary or secondary school years, new parents, or older adults. Further, interventions may be universally applied to a whole group or targeted at those judged to be most at need. Each of these approaches is illustrated below.

Individual-level interventions.

Interventions targeted at individuals, whether through self-help books, online courses, or more formal training programs, can serve to develop the skills that underlie wellbeing. Solid evidence of individual-level benefit comes mainly from formal, group-based courses, briefly reviewed in the section on types of intervention.

Interventions to enhance wellbeing can be successfully administered at any stage in the life course (Foresight Report on Mental Capital and Wellbeing, 2008), however, the greatest benefit is likely to occur at the early stages of the life course, when both the brain and behavior are at their most malleable. For instance, good nurturing, secure attachment, and the development of trust in early life are likely to lead to sustainable wellbeing benefits throughout life. To date, however, most of the evidence concerns the effects of the early social environment on illness, and relatively little longitudinal research has focused on positive wellbeing outcomes. Several studies which have analyzed data from the longest-running British birth cohort—the 1946 birth cohort study—have demonstrated that parenting style is strongly related to positive measures of subjective wellbeing outcomes in later life (e.g., Huppert et al., 2009). Early characteristics of the child, such as happiness, sociability, and optimism, have also been linked with wellbeing later in life (e.g., Daukantaite & Bergman, 2005; Richards & Huppert, 2011).

Although the greatest benefits are likely to occur with early interventions, interventions can certainly be effective in later stages of the life course. Enhancing the wellbeing of older adults has been sadly neglected to date.



Most interventions in late life regard elderly people as being dependent on support, rather than recognizing they can play in contributing to the wellbeing of others, which in turn will enhance the wellbeing of the older person. A fine example of a wellbeing intervention targeting older people is the Experience Corps study (see Chapter 8, this volume).

It is important to recognize that interventions targeted at individuals have their limitations. For one thing, they are too often targeted at those in distress, and although they may relieve the distress of the effected individuals, they do nothing to reduce the overall burden of distress in the population. This is because individuals with common mental disorders, such as depression and anxiety, do not constitute an isolated group, but come from the general population. Anyone of us can experience these symptoms and disorders at some point in our lives. In order to reduce the total burden of distress and the common mental disorders, the epidemiological evidence suggests that we need to shift the whole population towards positive mental health. This can be done by training members of the general population in the skills that underlie wellbeing. As shown in Figure 1.3, a very small population shift towards positive mental health can lead to a large reduction in the prevalence of common mental disorders, as well as a large increase in the percentage of the population that is flourishing (Huppert, 2009).

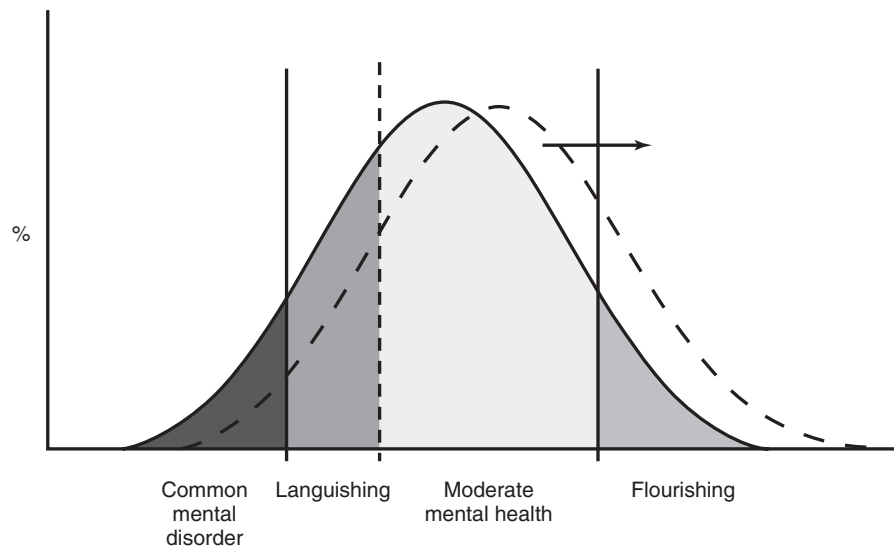


Figure 1.3. The Effect of Shifting the Mean of the Mental Health Spectrum.



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The social context also plays an important role in the effectiveness of interventions. Maintaining a high level of subjective wellbeing, or practising the skills that underlie wellbeing, can be difficult if the individual is in an unsupportive context; conversely, having others around you who also practise these skills can be extremely helpful in the development of sustainable wellbeing. For this reason, interventions that are targeted at the institutions and organizations in which we live and work can have benefits above and beyond those that target individuals alone. For instance, although parenting classes are often targeted at families with the greatest need (e.g., because a child has a conduct disorder), there is strong evidence that a universal approach which offers parenting courses independent of need improves the wellbeing of the majority of children, as well as having their strongest effect on the children who need it most. Further, the benefits extend beyond the child by improving the relationship between the parents (e.g., Stewart-Brown & Schrader-McMillan, 2011; see Chapter 2, this volume).

Organizational level interventions.

Schools form an ideal context in which to teach the skills of wellbeing, and there have been, and continue to be a myriad different approaches to this task. Relatively few, however, have been properly evaluated, and most focus on reducing illbeing (e.g., depression, bullying), making the tacit assumption that wellbeing will automatically arise. However, studies are increasingly beginning to look at positive wellbeing outcomes and the factors associated with them, such as improved relationships with peers and teachers, and increase academic performance. A systematic review of this research has been published by Weare and Nind (2011), and the authoritative highlights of this review are included in this volume (Chapter 3).

On average, half our life is spent at work, and there has been growing acceptance of the importance of wellbeing in the workplace. As is the case with school wellbeing programs, it is rare that the plethora of wellbeing courses offered to staff in their workplace are properly evaluated, and this is an area which is ripe for more research. However, there have been some good studies which show not only that workplace programs can improve the wellbeing of individual employees, relationships within the workplace, and productivity, but that the benefits extend beyond the workplace into the family and relationships beyond work. A systematic review of this literature is included in this volume (Chapter 6), along with a first-rate report from professionals working within a major U.K. corporation (Chapter 10).





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At a community or societal level, developing civic engagement, strong social networks, and identifying assets rather than deficits are all associated with increased wellbeing at both the individual and group level (Halpern, 2005, 2009; McClean & Dellot, 2011; Putnam, 2000). Helliwell (see Chapter 19) cites a number of examples where the life of a community has been enhanced, either deliberately through demonstration projects or as a result of natural disaster, such as the experience of Aceh, Indonesia following the 1994 tsunami. Helliwell draws attention to institutions as enablers of wellbeing, citing the example of the Singapore Prison study, in which inmates and the prison service worked together to redesign the prison experience, with the result that staff morale improved, better connections were formed between prison and the rest of society, and levels of re-offending dropped by one third (Helliwell, 2011). Initiatives such as the creation of community gardens, or walkable neighborhoods, for example, where groups of schoolchildren accompanied by an adult are walked to school, have multiple benefits for individuals, communities, and the environment. They lead to building connections, reduction of social isolation, and increased physical activity, and at the psychological level to increased engagement, sense of purpose and a feeling of belonging, all of which are related to high subjective wellbeing.

Societal level interventions have also been implemented through the media. DeVries (Chapter 15) shows how media approaches anchored in concepts of positive thinking at the individual level and empowerment and participation at the community level, can become a powerful ally for the improvement of people's wellbeing. TV, radio, web, and new social media platforms are now being specifically designed to engage populations and promote mental health and wellbeing. As DeVries points out, "In this approach the social media intervention itself is shaped interactively, in a context of mutual learning, so that the user/community is not just 'the object' of the production but a co-producer." He goes on to provide specific examples of how this approach has been used to improve mental health and the wellbeing of whole communities, both geographical and virtual.

Types of Intervention

There are two broad categories of intervention. One involves changing external circumstances, such as living conditions or infrastructure (e.g., quality of education or healthcare), the other involves changing internal experiences, including attitudes, emotions, and behaviors.



Within each of these broad intervention categories there are a number of approaches to bringing about the desired changes. In the case of altering external conditions to enhance wellbeing, this can be achieved through a regulatory approach (e.g., banning smoking in public places), a fiscal or monetary approach (e.g., minimum pricing for alcohol, or high tax on cigarettes or carbon emissions) or mandated changes to public services (e.g., requiring the teaching of social and emotional skills in schools, or better access to counseling services through family doctors or workplaces). Another approach which has been gaining in popularity is the use of “nudge” techniques (i.e., contextual changes which encourage individuals to make personally or socially desirable choices) (Sunstein & Thaler, 2003; Thaler & Sunstein, 2008). Examples include putting healthy food in the most prominent locations in cafeterias, restaurants, or supermarkets, rather than fatty foods, sweets, or alcohol, which are often strategically displayed in prominent places to tempt customers. Techniques such as these may indeed lead to improvements in subjective wellbeing. They are, however, by their nature imposed on individuals, who are essentially the passive recipients of the resulting benefits. Moreover, we need to know much more about the extent to which subjective wellbeing is improved by such indirectly administered “top-down” techniques. Evidence has often been cited that external circumstances only account for around 10% of the variation in wellbeing scores between individuals (Sheldon & Lyubomirsky, 2004) but within individuals such changes could have a more marked effect.

In contrast, the direct experiential focuses on internal changes, through training in wellbeing skills. There is abundant evidence that the skills for sustainable happiness or wellbeing can be learnt. Again, there are a variety of techniques which can be used. One is psychoeducation, through the media, or other education or training settings. However, it is well known that psychoeducation alone is of limited benefit in changing behavior, and needs to be combined with practising the skills that one has learned. A range of self-help courses are also available, online or in printed format, and wellbeing improvement is widely reported from people using such materials. However, in terms of a solid evidence base, the strongest evidence of wellbeing benefits comes from formal training in such techniques as cognitive behavior therapy (CBT) or mindfulness. CBT is mainly used in clinical settings to alleviate symptoms of mental disorder or distress. Mindfulness techniques, such as mindfulness-based stress reduction (MBSR) or mindfulness-based cognitive therapy (MBCT) have also been used in clinical settings, but are increasingly used in nonclinical contexts, including schools and workplaces.



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Numerous trials and systematic reviews show substantial wellbeing benefits of mindfulness training on wellbeing or on the reduction of physical or mental health problems which interfere with wellbeing (Chambers, Gullone, & Allen, 2009; Hofmann, Sawyer, Witt, & Oh, 2010; Meiklejohn et al., 2012; Weber, Jermann, Lutz, Bizzini, & Bondolfi, 2012). Among the reported benefits of mindfulness training, those which are related to subjective wellbeing include: reductions in stress and anxiety, increased positive mood, improved sleep quality, better emotion regulations, greater bodily awareness and increased vitality, and greater empathy. These reported benefits are further substantiated by findings on the neuroscience of mindfulness training. For example, a recent study showed structural changes in brain regions subserving some of the above benefits functioning following a standard 8-week MBSR course (Hölzel et al., 2011), as well as improvements in executive function (Tang, Yang, Leve, & Harold, 2012). Changes in brain function have also been described following a standard MBSR course, including the classic study of Davidson et al. (2003), in which a group receiving mindfulness training showed an improved antibody response to the influenza virus compared to a control group, and the magnitude of the antibody response was directly related to the increase in left prefrontal activation, an area which is associated with positive emotions and attention control.



Policy Implications of Wellbeing Science

In an ideal world, policies would be based on incontrovertible evidence of causal linkages between variables that are amenable to change, and their outcomes. Clear examples include the relationship between smoking or excessive alcohol consumption and serious health conditions (e.g., cancer, heart disease), or between insufficient fluoride and tooth decay. Not only is there strong evidence of association in these cases, but the direction of causality is absolutely clear: the serious health conditions do not cause smoking or alcohol abuse, nor does tooth decay cause lack of fluoride. In contrast, the situation is more complex when it comes to the policy implications for improving wellbeing. Not only are the causes (as opposed to associations) less well established, but in most cases there is a bi-directional relationship whereby high levels of wellbeing can lead to desirable behaviors and improved socioeconomic circumstances, as well as the reverse.

As researchers in wellbeing science, we would love to have incontrovertible evidence of factors amenable to change that can increase wellbeing, before



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making policy recommendations. On the other hand, the fundamental importance of wellbeing for individual and societal progress means that policy makers cannot wait until researchers have completed their investigations: which of course they never do. It is right that policy makers are impatient to get on with the job of increasing wellbeing, using the best data available at the time.

Importantly, bi-directionality of wellbeing and its causes/consequences implies that there can be a two-pronged approach to the enhancement of wellbeing. One approach would involve improving the external conditions or circumstances, such as living conditions, health, and social relationships that are linked to subjective wellbeing; the other approach would involve enhancing the mental attitudes and behaviors that are the components of wellbeing. Economically oriented policy makers would be drawn to the first approach, while psychologically or behaviorally oriented policy makers would be attracted to the second. In the first approach, an individual is viewed essentially as the passive recipient of external inputs; in the second, the individual is the active agent of positive change. It is likely that for people experiencing great hardship, for example, in terms of social isolation, or health or economic deprivation, changing the external circumstances could have a large effect on improving subjective wellbeing. On the other hand, people whose external circumstances (described earlier as their “objective wellbeing”) can be regarded as average or above average, frequently report very low levels of subjective wellbeing, and in these cases the more effective strategy may be to focus on improving their internal resources by training in the skills of wellbeing.

Whichever approach or combination of approaches policy makers choose, it is essential to evaluate outcomes using a common set of metrics. Without this, wellbeing policy, and the science of wellbeing itself, will be unable to progress. Earlier sections of this chapter have described the importance of recognizing that subjective wellbeing is a multidimensional construct, and urged the need for a consensus on the measurement of these multiple dimensions. Further, we need both long-term and short-term evaluations of policy initiatives. Some policies may have measurable benefits in the short term, but their impact may not be sustainable. Others may take time for their impact to be felt, but their effects may be long-lasting (e.g., Knapp, McDaid, & Parsonage, 2011).

As recognition of the importance and social value of wellbeing grows, so does the variety of well-intentioned (and often financially profitable) interventions to improve wellbeing. At this early stage in wellbeing science

and policy, it is arguably a good thing to “let all flowers bloom,” encouraging the development of original and innovative approaches. But this must be combined with sound evaluation of the success of any intervention program, both in the short and longer term. Moreover, it is not enough to show that wellbeing has been improved following a specific intervention, since almost any program that focuses on positive aspects of individual or organizational recipients will be favorably evaluated. It is therefore important that different interventions are compared against each other so that evidence can be accumulated on what are the most effective ingredients of the programs. This requires using a common set of multidimensional indicators of wellbeing. This approach will guarantee that, in time, policy makers can be confident that they are employing sound, evidence-based programs and the lives of individual citizens, communities, and nations can be transformed for the better.

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